

REMARKS/ARGUMENTS

Claims 1-24 are pending in the application. Claims 1-24 are canceled and new claims 25-59 are added.

Claims 3, 4, 7, 12 and 19 are objected to under 37 C.F.R. § 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant has canceled claims 3, 4, 7, 12 and 19.

Claims 1-22 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, claims 8 and 19 include the phrase "or the like" which renders the claims indefinite. Claims 1-22 are canceled.

Claims 1-7, 10-12, 17-21 and 23-24 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,238,546 to Knieper et al. Claims 1-7, 10-12, 17-21 and 23-24 are canceled. New claims 25-59 are added which do not anticipate the Knieper reference.

Claims 9, 13-16 and 22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,238,546 to Knieper et al., in view of U.S. Patent No. 5,738,778 to Doring. Claims 1-7, 10-12, 17-21 and 23-24 are canceled. New claims 25-59 are added which are not obvious of the Knieper reference in view of the Doring reference.

In particular, the Knieper reference does not disclose the generation of hydrogen peroxide. Hydrogen peroxide is the primary vehicle for disinfection of microorganisms in wastewater and potable water.

Also, the Knieper reference does not disclose the generation of hydroxyl radicals.

Hydroxyl radicals are generated only in limited pH ranges and in the presence of ferrous iron (Fe^{2+}). Such hydroxyl radicals are, therefore, not a reliable and dependable agent for disinfection action but only an add-on "bonus" factor when specified wastewater/water conditions of pH and iron content are present. Hydrogen Peroxide, in contrast, is generated over the full operational pH range and is, therefore, a reliable and dependable agent of wastewater/water disinfection.

From both practical and cost-effectiveness standpoints, it is not advisable to change the pH or iron content in wastewater/water treatment and thus makes an invention dependent on the generation of hydroxyl radicals from electric fields of little or no economic value.

As referenced in the Knieper patent, H^+ and OH^- represent hydrogen and hydroxyl ions not hydroxyl radicals. The symbol for a hydroxyl radical is $\bullet\text{OH}$. Hydrogen radicals are not believed to exist in hydrogen peroxide chemistry or anywhere in the chemical literature.

The microbial fluorometric monitor of the present invention is included in the system to maintain control of the disinfection process. By measuring the outcome of the process (disinfection), the monitor is able to adjust the input voltage and resulting field strength to optimize the disinfection process. Without such process control, effective wastewater/water disinfection or oxidation is not possible.

The referenced on-line, real-time microbial fluorometric monitor no way resembles the gas chromatograph-mass spectrometer (GC-MS) mentioned in Doring's patent for the following reasons:

The referenced microbial fluorometric monitor is an on-line form of a spectrofluorometer not a gas chromatograph/mass-spectrometer (GC-MS) combination. These are completely different instruments operating on different physical phenomena, of different design and construction and a totally different method of operation.

The referenced fluorometric monitor is an on-line instrument capable of measuring and controlling a process in real-time. The GC-MS is a laboratory instrument that measures samples after the fact as described in the Doring patent (column 8, lines 45-67). It would not be capable of on-line measurement and process control.

The GS-MS mentioned in Doring does not measure the biochemical compound NADH in the spectral range around 360 nm with an excitation of 340 nm. Measuring NADH not only indicates the presence and population density of bacteria but also their life status (alive or dead) which is the measurement required for electroionic process control.

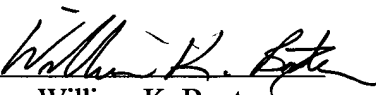
In view of the amendments and remarks presented above, the Applicant believes that the application is now in condition for allowance, and respectfully requests reconsideration of the application, withdrawal of the rejections and allowance of the claims. No new matter has been added to the application. The Applicant respectfully requests that the Examiner telephone the undersigned in the event a telephone conference would be helpful in advancing prosecution of the application.

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Respectfully submitted,

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